

REMARKS

This is in response to the Office Action dated June 9, 2004, and the references cited therewith. No claims are amended, canceled, or added; as a result, claims 1-27 remain pending in this application.

§112 Rejection of the Claims

Claims 1-25 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The Office Action asserts that “in claims 1 and 25 it is unclear whether the recited ‘process input control signal,’ which is claimed as provided by the controller, is separate from the ‘controller output signal’ recited in the step of calculating.” Applicant respectfully traverses this assertion and submits that the claim is clear in its present form.

For example, the process input control signal as claimed, described in the detailed description, and as illustrated in FIG. 1, is a signal for input into a process, such as process 30 of both FIG. 1 and FIG. 2. The process input control signal further includes introduced disturbance as set forth in the claim and illustrated in FIG. 1 and FIG. 2 (i.e., reference number 8). On the other hand, the controller output signal is used in the calculating of the one or more new gains for the controller. The process input control signal and the controller output signal are therefore different signals used for different purposes in the methods of both claims 1 and 25. Thus, Applicant respectfully submits that the language used in claiming the subject matter of both claims 1 and 25 is clear. Withdrawal of the § 112, second paragraph rejection is requested.

§102 Rejection of the Claims

Claims 1-12, 14-20 and 25-27 were rejected under 35 USC § 102(b) as being anticipated by Nishikawa et al. (“A Method for Auto-Tuning of PID Control Parameters, Automatica, 20(3), pp. 321-332, 1984).

Applicant reiterates the previous arguments submitted with respect to Nishikawa. Applicant further submits that Nishikawa fails to teach each and every element of the claims.

For example, the Office Action, at page 10, paragraph 36, asserts, “[T]he claims merely recite ‘calculating’ by ‘using’ these values and do not require separately providing them (although, it could also be argued that they have been provided).”

In contrast, claim 1 recites in part:

"introducing a disturbance into the process input control signal;
calculating one or more new gains for the controller using a controller output signal, the process input control signal, and the target loop transfer function;"

Applicant is unable to locate, in Nishikawa, a teaching or disclosure wherein the disturbance is included in calculating a gain. In claim 1, calculating includes using the process input control signal that, as noted above, includes introduced disturbance.

Thus, for the reasons previously set forth and for the reasons above, Applicant respectfully submits that independent claim 1 is patentable in its present form.

Applicant further submits that independent claims 25-27 contain similar element as independent claim 1 and are patentable over Nishikawa for similar reasons.

Claim 2-12 and 14-20 depend, directly or indirectly, from independent claim 1 and are patentable over Nishikawa for the reasons argued above, plus the elements of the claims.

Allowance of claims 1-12, 14-20, and 25-27 is earnestly requested.

§103 Rejection of the Claims

Claim 13 was rejected under 35 USC § 103(a) as being unpatentable over Nishikawa et al. in view of Stoddard et al. (U.S. Patent No. 5,895,596).

Claim 13 was rejected under 35 USC § 103(a) as being unpatentable obvious over Nishikawa et al. in view of Grassi (“Proportional-Integral-Derivative Controller Tuning by Frequency Loop-Sharing,” Ph.D. dissertation, Arizona State University, December, 1999).

Claim 21-24 was rejected under 35 USC § 103(a) as being unpatentable obvious over Nishikawa et al. in view of Grassi et al (“PID Controller Tuning by Frequency Loop-Sharing,” Proc. 35th Conference on Decision and Control, Japan, December, 1996).

These rejections of claims 13 and 21-24 are all based in part on Nishikawa. The references Stoddard, Grassi, and Grassi et al fail to cure the deficiencies of Nishikawa, namely

that Nishikawa fails to teach calculating new gains using the process input control signal which includes the introduced disturbance.

Further, claims 13 and 21-24 depend, directly or indirectly, on patentable independent claim 1. If an independent claim is patentable, then any claim depending therefrom is nonobvious. MPEP § 2143.03

Thus, Applicant respectfully submits that claim 13 and 21-24 are patentable. Allowance of these claims is earnestly requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6972 to facilitate prosecution of this application.

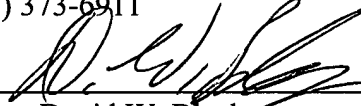
If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

SUJIT V. GAIKWAD ET AL.

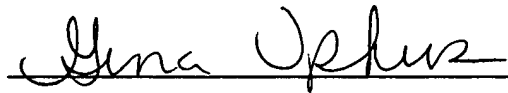
By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 373-6911

Date September 7, 2004 By 
David W. Black
Reg. No. 42,331

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 9th day of September, 2004.

Gina Uphus
Name


Signature